

REMARKS

This is in response to the Office Action mailed July 20, 2007.

Claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23 and 25 are currently pending in the application.

Claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23 and 25 stand rejected.

Applicants have amended claims 1 and 18, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on Sakemi et al. (U.S. Patent 5,655,704) in view of Fjelstad (U.S. Provisional Application No. 60/078472)

Claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakemi et al. (U.S. Patent 5,655,704) in view of Fjelstad (U.S. Provisional Application No. 60/078472). Applicants respectfully traverse this rejection, as hereinafter set forth.

Applicants assert that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure.

Applicants assert that the Sakemi et al. reference in view of Fjelstad reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding presently amended independent claims 1 and 18 because the Sakemi et al. reference in view of Fjelstad reference does not teach or suggest all the claim limitations of the claimed inventions. After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicants have amended the claimed invention to clearly distinguish over the cited prior art.

Turning to the cited prior art, the Sakemi et al. reference teaches or suggests a solder ball mounting apparatus using a template 4 to position solder balls 3 from a hopper 12 onto pads 2a of a substrate 2. The substrate 2 only having a plurality of electrodes 2a above the surface of the substrate 2, not having any electrodes whatsoever recessed into the surface of the substrate 2. There is no teaching or suggestion in the Sakemi et al. reference to dispense solder paste from the hopper 12 into or through a template 4 onto the substrate 2. There is no description whatsoever in the Sakemi et al. reference for dispensing solder balls 3 onto electrodes 2a located in recesses or level surfaces of the substrate 2. The Sakemi et al. reference clearly describes solely the placement of solder balls 3 on the curved surfaces of the electrodes 2a which are neither level nor recessed.

The Fjelstad reference teaches or suggests a stencil having apertures therein having a diameter larger than the diameter of a solder ball to be passed therethrough but less than two times diameter of the solder ball to be passed therethrough. The Fjelstad reference contains no teaching or suggestion regarding the spacing of the stencil from the hopper.

Applicants assert that the combination of the Sakemi et al. reference in view of Fjelstad reference does not teach or suggest the claim limitations of presently amended independent claims 1 and 18 calling for “a hopper, said hopper having a bottom opening having a dimension extending across said first pattern for dispensing said spheres into said plurality of through-holes extending across said stencil plate, the bottom opening having width in the range of at least about two diameters of a conductive sphere to about ten diameters of a conductive sphere, said hopper having a bottom lower surface spaced from an upper surface of the stencil plate a distance in the range of about less than one-half the diameter of a conductive sphere to about less than one-third the diameter of a conductive sphere”. Applicants assert that the Sakemi et al. reference teaches or suggests no such claim limitations and the Fjelstad reference teaches away from such claim limitations as the aperture size is to be greater than the diameter of the solder ball and less than two times the diameter of the solder ball. Applicants further assert that drawing Fig. 2 of the Fjelstad et al. reference cannot be construed as teaching or suggesting the claim limitation calling for “said hopper having a bottom lower surface spaced from an upper surface of the stencil plate a distance in the range of about less than one-half the diameter of a conductive sphere to about

less than one-third the diameter of a conductive sphere” because the Fjelstad et al. reference contains no teaching or suggestion or recognition of the inventive concept of such claim limitation . *Ex parte* Duret, Patent Office Board of Appeals, 165 USPQ 404 (1969).

Therefore, Applicants assert that presently amended independent claims 1 and 18 are allowable as well as the dependent claims therefrom.

ENTRY OF AMENDMENTS

The amendments to claims 1 and 18 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application to comply with the provisions of 35 U.S.C. § 132. Further, the amendments do not raise new issues or require a further search.

CONCLUSION

Claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23 and 25 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants’ undersigned attorney.

Respectfully submitted,



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